

Science Benchmark: 03: 02

For any particular environment, some types of plants and animals survive well, some survive less well and some cannot survive at all. Organisms in an environment interact with their environment. Models can be used to investigate these interactions.

Standard II:

Students will understand that organisms depend on living and nonliving things within their environment.

STUDENT BACKGROUND INFORMATION

LIONS AND TIGERS AND BEARS, OH MY!

In the movie, “The Wizard of Oz,” Dorothy came upon many unusual and different things. Some things were *living*, and other things were *nonliving*. Sometimes it is easy to see if things are living or nonliving. A puppy moves, grows, and has parents. Puppies are living. A bicycle can move, but does not grow or have parents. The bicycle is nonliving. Is a tree living? It grows and reproduces but doesn’t move much. Plants are living things that do not move very much. Animals are living things that usually move around a lot. An *organism* is anything that is living.



Organisms



Nonliving Things

living - able to grow, reproduce, and move

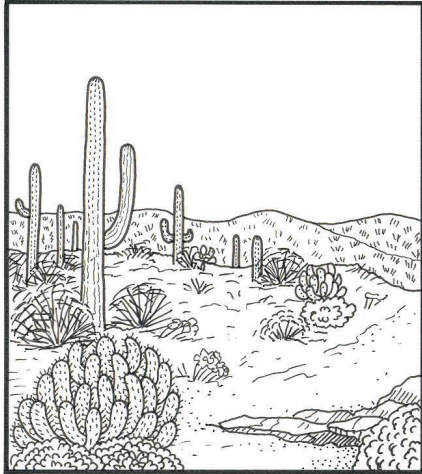
nonliving - not able to grow, reproduce, or move

organism - anything that is living

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Dorothy makes her way to Oz, a new *environment*. In the movie, Oz is different from Kansas where Dorothy came from. It has a different *temperature*, and has different amounts of sunshine and rain. The organisms that live there like the environment of Oz. On Earth, there are many environments. Some are dry and hot, like our deserts. Others are cool and moist, like our mountain forests.

Desert Environment



Forest Environment



In all environments there is an interaction between organisms and non-living things. Every breath of air you take is an interaction of a living organism (you) with a nonliving thing (the air). In all environments, there is an interaction between organisms. Plants need animals to carry away seeds. Animals need plants for shelter and food. Let's learn how we can observe how organisms live in their environments.

Environments can be large or small. Large environments such as forests are difficult to study. Often *small-scale* environments are studied instead. A flowerbed in your yard is an example of a small-scale environment. An even smaller environment would be a *terrarium*. Terrariums help us study land environments. Another type of small-scale environment is an *aquarium*. We can learn about ponds and oceans from an aquarium.

aquarium - a container filled with water and water plants and animals

environment - the living and nonliving things in an area

interaction - things acting upon one another

observe - see or sense with careful study

small-scale - something small in size

temperature - how hot or cold something is

terrarium - a container with soil where land plants and animals are kept

Aquariums and terrariums are used to study environments. Interactions between living things can be observed. Experiments can be done to see what interactions are most important to living things. For example, do fish need warm or cool water? What is the best amount of bubbled air? How much light do the plants need? If you have ever had a fish tank or ant farm, you know that they are also very fun just to watch!



An Aquarium

The environment helps living things *survive*. Living things need shelter, food, air, the right temperature and *moisture*. If any of these are not correct for a plant or animal it may not survive in that environment. What can an organism do if the environment changes? Animals can move to a new environment but plants cannot. Plants must “move” by spreading their seeds.

Dorothy had a special way to leave the Land of Oz, one that none of us could ever use. She clicked her heels and commanded her shoes to take her back to her home environment. After all, there is no place like home.

moisture - *water*

survive - *stay alive*

Science Language that Students Should Know and Use

- 1. aquarium:** a container filled with water and water plants and animals
- 2. environment:** the living and non-living things in an area
- 3. interaction:** things acting upon one another
- 4. living:** able to grow, reproduce, and move
- 5. moisture:** water
- 6. nonliving:** not able to grow, reproduce, or move
- 7. observe:** see or sense with careful study
- 8. organism:** anything that is living
- 9. small-scale:** something small in size
- 10. survive:** stay alive
- 11. temperature:** how hot or cold something is
- 12. terrarium:** a container with soil where land plants and animals are kept